Amendments to Claims:

Please amend Claims 3, 5-9, and 12-18 as indicated below.

1. (Original) System for conducting bioassays, comprising a substrate plate with a number of wells, and an incubation device for holding the plate, characterized in that the substrate plate comprises a microplate with an array of wells arranged in rows and columns, wherein the bottom of each well is a microarray substrate having oriented flow- through channels, and in that the incubation device comprises an incubation chamber for holding the microplate and a cover for sealing the incubation chamber, said incubation device having a heat block with array of openings, each opening adapted to receive a well of the microplate, wherein a sealing gasket is provided for individually sealing each well of the microplate.

2. (Original) System according to claim 1, wherein the incubation device comprises a circumferential wall, wherein a sealing gasket is provided on the upper side of said circumferential wall, said sealing gasket being adapted to sealingly engage the lower side of the microplate.

3. (Currently amended) System according to claim 1 [[or 2]], wherein the maximum thickness of the incubation device heat block corresponds with the depth of the wells of the microplate, wherein preferably the circumferential wall of each opening is adapted to contact the outer wall of a well of the microplate.

4. (Original) System according to claim 3, wherein the wells of the microplate and the openings of the heat block are conically shaped.

5. (Currently amended) System according to claim 1, ~~any one of the preceding claims,~~ wherein the heat block, the circumferential wall and a bottom wall of the incubation device enclose an air chamber having a connection for an external vacuum/pressure system and a drain connection.

6. (Currently amended) System according to claim 1, ~~any one of the preceding claims,~~ wherein the cover is transparent.

7. (Currently amended) System according to claim 1, ~~any one of the preceding claims,~~ wherein the cover is provided with a heating element.

8. (Currently amended) System according to claim 1, ~~any one of the preceding claims,~~ wherein the incubation device is provided with a heating element.

9. (Currently amended) System according to claim 1, ~~any one of the preceding claims,~~ wherein the substrate is made of a metal oxide, preferably an aluminium oxide.

10. (Original) Microplate, comprising an array of wells arranged in rows and columns, wherein the bottom of each well is a microarray substrate having oriented flow-through channels.

11. (Original) Microplate according to claim 10, wherein each well has a conical shape.

12. (Currently amended) Microplate according to claim 10 [[or 11]], wherein at least the upper surface of the microplate and the inner side of the wells is non-

reflecting.

13. (Currently amended) Microplate according to claim 10, [[11 or l2,]] comprising a skirt having a lower side, wherein the substrates of the wells are substantially located in the same virtual plane and the lower side of the skirt is located in the same virtual plane or at a higher level.

14. (Currently amended) Microplate according to claim 10, ~~any one of claims 10-13,~~ wherein all substrates are substantially located in the same virtual plane.

15. (Currently amended) Microplate according to claim 10, ~~any one of claims l0-14,~~ wherein the substrates are incorporated in the plate by moulding, glueing, thermal bonding or the like.

l6. (Currently amended) Microplate according to claim 10, ~~any one of claims 10-15,~~ wherein the substrate is made of a metal oxide, preferably an aluminium oxide.

17. (Currently amended) Incubation device for a system according to claim 1. ~~any one of claims 1-9.~~

l8. (Currently amended) Apparatus for conducting high throughput screening tests, comprising a system according to claim 1, ~~any one of claims 1-9,~~ a device for linearly moving the incubation device along a plurality of stations including a station for loading a microplate into the incubation device, a station for dispensing a liquid into the wells of the microplate, and a reading station for individually illuminating each substrate of the microplate, wherein a device is provided for moving the incubation device

with the microplate with respect to the reading station in mutually perpendicular directions.